ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of the	)	PR Docket No. 92-257
Commission's Rules	)	
Concerning Maritime	)	
Communications	)	

COMMENTS OF THE ASSOCIATION OF AMERICAN RAILROADS

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September 22, 1995

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SUMMARY

The Commission has proposed in its Further Notice of Proposed Rule Making in this proceeding to allow maritime users access to 200 kHz of spectrum currently allocated to the Railroad Radio Service. The Commission's sharing proposal would have serious adverse consequences for the railroads.

Because railroads rely on radio communications to perform critical safety functions and because congestion in the railroad bands is already severe, sharing of railroad channels would be particularly risky and dangerous.

In addition, the proposed separation criteria will not protect railroad operations because they fail to account for mobile-to-mobile and duplex operations as well as the phenomenon of ducting. Moreover, the Commission's accepted definition of the term "navigable waterway" is too broad to impose any meaningful limit on maritime use of railroad radio frequencies.

The Commission should first address the problem of congestion in the maritime band through the adoption of spectrum efficiency measures similar to those adopted in the Commission's refarming proceeding for the Private Land Mobile Radio bands. Allowing maritime users to share railroad frequencies will impose a severe burden on railroads already facing a massive investment to convert to narrowband and will give the maritime users an incentive to avoid conversion to more spectrally efficient technology.

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To: The Commission

COMMENTS OF THE ASSOCIATION OF AMERICAN RAILROADS

The Association of American Railroads ("AAR"), by its undersigned counsel and pursuant to Section 1.415 of the Rules of the Federal Communications Commission ("FCC" or "Commission"), hereby submits its comments in the above-captioned proceeding in response to the Commission's Further Notice of Proposed Rule Making ("FNPRM"), released May 25, 1995. The FNPRM proposed to permit maritime service sharing of certain railroad radio frequencies.

I. Introduction and Background

The Commission initiated this proceeding in November, 1992, by issuing a Notice of Proposed Rule Making and Notice of Inquiry ("NPRM") to review present requirements and future trends concerning maritime communications.[1/] The

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1/ Amendment of the Commission's Rules Concerning Maritime Communications, Notice of Proposed Rule Making and Notice of Inquiry in PR Docket No. 92-257, 7 FCC Rcd 7863 (November 30, 1992).

Commission proposed in its NPRM to permit inter-service sharing between the maritime service and the Railroad Radio Service.[2/] AAR filed both comments and reply comments in response to the NPRM, explaining that congestion and safety concerns would preclude successful sharing of railroad radio channels.[3/] AAR emphasized that the railroads' ability to operate their radio communications network as an autonomous seamless whole would be lost if maritime users were allowed to share frequencies at the very locations where railroad frequency use is the heaviest. Although it noted AAR's concerns in the FNPRM, the Commission nevertheless is proposing to allow maritime users to share 200 kHz of spectrum from the Railroad Radio Service.[4/]

The Commission's sharing proposal directly and adversely affects fifteen current channels in the Railroad Radio Service; thirty channels potentially will be affected in light of the Commission's proposal to create new frequencies in the refarming proceeding.[5/] As the representative of the industry that is directly affected by the Commission's current proposal, and as the frequency coordinator with respect to the operation of land mobile and other radio-based services for the railroad industry, AAR

2/ Id. at 7868.

3/ AAR Comments in PR Docket No. 92-257 (June 1, 1993); AAR Reply Comments in PR Docket No. 92-257 (July 15, 1993).

4/ FNPRM at ¶ 33. Specifically, the Commission proposed to allow maritime users access to frequencies from 161.3625 to 161.5625 MHz.

5/ Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, Report and Order and Further Notice of Proposed Rulemaking in PR Docket No. 92-235 (June 23, 1995)(hereafter "Refarming Report and Order").

has a vital interest in this proceeding. It is AAR's view that sharing is not feasible in these bands and, in fact, would have serious adverse consequences on railroad operations.

II. Sharing Railroad Channels Would Result in Unsafe Conditions

The railroads' use of radio communications for critical safety functions makes sharing particularly risky, dangerous and unwise. Sharing would aggravate congestion in bands that have already reached saturation point in numerous geographic areas and would present a serious risk of interference to railroad users. Radio systems are vital to ensure safety on the nation's railroads. The railroad industry uses radio communications to advise of dangerous conditions and, if necessary, to bring railroad operations to a halt to prevent unsafe operations. Radio communications between trains and work crews on the railroad rights-of-way are essential to protect railroad employees and the general public. Only radio can provide immediate information on the location, direction and speed of movement of hundreds of trains operating at the same time on each major railroad throughout the nation. In a 1994 letter to FCC Chairman Hundt, the Administrator of the Federal Railroad Administration ("FRA") noted that, "adjacent channel interference and congestion of available frequencies are an important public safety concern."[6/]

Because of the critical safety applications, railroad use of mobile communications is characterized by the need for extremely high reliability. Access to

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6/ Letter from FRA Administrator, Jolene Molitoris, to Chairman Hundt, July 13, 1994, at 2 (hereafter "FRA Letter").

clear channels is essential in times of emergency. For example, a railroad channel was the means of first seeking emergency assistance upon the occurrence of a tragic derailment in 1993 involving a maritime vessel which caused the death of 47 passengers and crew aboard an Amtrak train traveling from Los Angeles to Miami.[7/] Access to clear channels is equally critical for coordination of train movements -- if such channels are not immediately available, disastrous results can occur. For example, in April, 1984, a malfunction on the mainline railroad radio channel prevented the engineer of a Chicago-bound freight train from tuning to a frequency that should have warned him of on-coming traffic. A head-on collision ensued, killing five Burlington Northern crewmen (see excerpt from article dated April 17, 1984, attached hereto). The consequences of occupancy of a critical railroad operational channel by maritime (or other non-railroad users) are simply too great to accept the risk of interference to critical communications.[8/]

7/ See Report of National Transportation Safety Board ("NTSB"), PB 94-916301, NTSB/RAR-94/01, adopted September 19, 1994, Notation 6167B, at 1, 8. The NTSB found that the passenger train derailment in a bayou near Mobile, Alabama, was caused by the dislocation of a railroad bridge that was struck by a maritime vessel (a barge under tow) in heavy fog, resulting, in part, from the lack of radar navigation competency on the part of the maritime personnel operating the towing vessel. Id. at 59, 61.

8/ In this regard, the Commission concluded in an earlier proceeding in this docket that Industrial/Land Transportation ("I/LT") eligibles can share maritime frequencies because "unlike most public safety operations, I/LT communications requirements may be able to tolerate licensing on secondary basis." Amendment of the Commission's Rules Concerning Maritime Communications, First Report and Order in PR Docket No. 92-257 (May 26, 1995) at ¶ 9 (hereafter "First Report and Order"). Secondary status is not at issue here, but the Commission's discussion demonstrates that safety is a

(continued...)

III. Sharing is Not Feasible Because of Severe Congestion

The FRA pointed out in a 1994 report to Congress that, "[a]s America becomes more densely populated and its existing highway system struggles with limited capacity, the Nation will need rail transportation even more in the next century."[9/] As demand increases for rail service, the railroads will rely even more heavily on safe and efficient radio communications. This need cannot be safely satisfied if the Commission permits sharing in the geographic areas where congestion is already at its worst, such as the major shipping and rail centers.[10/]

Congestion on railroad frequencies is often difficult to measure by traditional channel utilization techniques. Even if a railroad channel is not actively transmitting information at any given time, it still is being utilized. For example, radio-based safety devices, such as trackside defect detectors, do not continuously transmit information

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8/(...continued)
factor in determining which services can share with others. Because railroads rely on radio for critical safety applications, the potential adverse consequences of sharing are severe. The Commission's own regulations highlight that railroad radio communications are necessary "to assure safety of operations." 47 C.F.R. § 90.91. For this reason (and because of the often close proximity of railroads to navigable waterways), the railroads did not participate in the earlier proceeding and do not intend to make use of the maritime frequencies at issue in that proceeding.

9/ Railroad Communications and Train Control, Federal Railroad Administration, Department of Transportation Report to Congress, July 1994 at 1 (hereafter FRA Report).

10/ It is also unclear from the FNPRM whether the duplex channels the Commission proposed to make available for maritime use are physically paired or if the maritime user has the option to pair any combination of the selected channels. Congestion on these frequencies will be worse if the maritime user can simply match any available pair.

on the channels assigned for their use, but they must have immediate access to such channels in the presence of passing trains. If the necessary channels are not available, the relay of information that could prevent a derailment would be disrupted. If maritime users had access to railroad channels there is the serious risk of disruption or interference to emergency transmissions, all with potentially disastrous consequences.

IV. The Commission's Proposed Geographic Limits on Maritime Sharing of Railroad Channels are Meaningless

The Commission is proposing to "limit" sharing to locations within 16 km (10 miles) of the U.S. coast line "or any navigable waterway."[11/] The coast line limit is meaningless for the railroads because of the intensity of rail operations in and near all major port cities. The "limit" with respect to navigable waterways is no better. In the First Report and Order in this docket the Commission adopted the definition of "navigable waterway" contained in 33 C.F.R. § 2.205-25,[12/] which is so expansive as to include almost any body of water on which boats can operate. It is quite common for railroads to run parallel to rivers and other waterways.[13/] The practical result of

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11/ FNPRM at ¶ 35.

12/ First Report and Order at n.4. According to this definition navigable waters are "[t]erritorial seas...; [i]nternal waters...that are subject to tidal influence; and [i]nternal waters not subject to tidal influence that are or have been used, or are or have been susceptible for use, by themselves or in connection with other waterways, as highways for substantial interstate or foreign commerce..." 33 C.F.R. § 2.05-25.

13/ The Commission's statement, thus, that I/LT users were ideal candidates for sharing maritime frequencies in land-locked areas "because many of these

(continued...)

such a comprehensive definition will be to expose railroads to the adverse consequences of sharing their vital safety and control frequencies throughout a huge segment of their operational network, rather than within narrowly circumscribed geographic areas.

The Commission's proposal would also have serious transborder implications. For example, maritime sharing of railroad frequencies in the Great Lakes area would interfere with Canadian use of the same spectrum for a variety of railroad functions, and would require international approval prior to implementation.

V. The Commission's Proposed Separation Criteria Are Inadequate and Irrelevant

The Commission is proposing to protect land mobile operations by making most of the shared frequencies only available to public coast stations for paired, duplex operations and by proposing co-channel separation criteria.[14/] These criteria will not provide adequate protection to railroad operations. The separation matrix mistakenly assumes that sharing of railroad frequencies by maritime users will implicate only base-to-base transmissions. The separation criteria will not protect mobile-to-mobile railroad radio communications operating on mobile-only channels from interference by public coast station transmissions. Mobile-only channels are

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13/(...continued)
users operate in rural areas far from navigable waterways," First Report and Order at ¶ 9, does not hold true for the railroads.

14/ FNPRM at ¶ 34.

commonly used for communication between maintenance and security crews along the railroad rights-of-way and in the normal conduct of yard operations.

Mobile-only channels are also used for controlling slave locomotives that are placed within a train to assist the lead locomotive by providing, among other functions, auxiliary starting, pulling, and braking actions.[15/] Because the use of slave locomotives distributes power throughout a train rather than locating it at a single forward point, the railroads are able to move longer trains more safely than would otherwise be possible. The slave locomotive radio link allows the lead locomotive to communicate information that is necessary for the smooth functioning and reliable operation of the train to the unmanned slave locomotive in the mid-section of the train. Needless to say, derailments can occur if the forces applied to the train by the lead and slave locomotives are not closely synchronized and coordinated. Any interference with or degradation of this critical communication link between the lead and slave locomotives could significantly disrupt vital freight movement operations of the nation's railroads and risk both life and property.

The Commission's separation criteria also fail to account for the fact that some railroad communications rely on duplex systems as well as simplex systems for train communications. Duplex systems are used extensively in yard operations to relay communications between yard crews engaged in assembly and disassembly of trains and dispatch. In this duplex arrangement, transmissions by the public coast base station would risk causing interference to the railroad mobiles and the railroad base

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15/ 47 C.F.R. § 90.91(c), note 11.

receiver. Railroad mobiles are typically licensed for system-wide use and, thus, are not limited to use in relation to a base station. For example, Union Pacific Railroad ("UP") holds a license for mobile-only channels that covers the entire breadth of the UP Pacific Railway system (see attachment B).[16/] Because railroad mobiles such as these are licensed to operate at any point along the system right-of-way and are not "tied" to any fixed point, interference from maritime users is a matter of very real and serious concern.

Finally, the Commission's geographic separation criteria fail to take into account the phenomenon of ducting which is particularly common over bodies of water. Ducting occurs when the temperature varies between air and water and a layer of stagnant air, an inversion, forms above the water which promotes VHF propagation. As an example, earlier this month, railroad stations located on Long Island, New York were causing interference to the Washington, D.C. Metro system. The distance between the two points exceeds 250 miles. If reference had been made to the Commission's separation table using the operational parameters of the above situation, a separation of only 100 miles would have been required. Such a result clearly shows that the table is seriously flawed and would provide insufficient protection to railroad radio communications.

16/ Union Pacific Railroad Radio Station License for Call Sign KA2337, file number 9301295938.

VI. The Commission Should First Attempt to Address Maritime Congestion Through Adoption of Spectrum Efficiency Measures

Ironically, the Commission noted that the ideal way to address the congestion problems in the maritime bands would be through "additional regulatory flexibility in-service, and by facilitating the development and use of new, spectrally-efficient technology," but it concluded that, "these measures alone...have not resolved channel congestion."[17/] This conclusion is totally at odds with current U.S. government proposals to introduce spectrum efficient technology in the maritime bands in a manner similar to the current refarming process in the Private Land Mobile Radio ("PLMR") bands.[18/] For the Part 90 PLMR bands, the Commission has recently adopted a new narrowband channelization plan and a time-frame for the transition to narrowband technology to address the problem of congestion and to encourage the use of spectrally-efficient technologies.[19/] The implementation of a similar transition in the maritime service has been the subject of international discussion and will be an agenda item at the 1997 World Radiocommunication Conference ("WRC-97")[20/]. It is only logical and fair to require maritime users to undergo a similar shift to more

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17/ FNPRM at ¶ 32.

18/ See "Improved Efficiency in the Use of the Band 156-174 MHz by Stations in the Maritime Mobile Service," United States Working Party 8B, Document No. 8B/02, August 15, 1995 (hereafter "Working Party 8B, Document No. 8B/02").

19/ Refarming Report and Order at ¶¶ 16-41.

20/ See ITU Resolution No. [COM4/2], Preliminary Agenda for the 1997 World Radiocommunication Conference, at 3.6.1 (November 19, 1993). See, also Working Party 8B, Document No. 8B/02 at 1.3 (explaining that proposals to improve spectrum efficiency in the maritime service will be addressed at WRC-97).

spectrum efficient technology before requiring the PLMR users to share their limited allocations. Mandated sharing with maritime users will impose a double burden on the railroads, requiring them to make a massive investment to convert to narrowband technology and subjecting their channels to shared use by maritime interests who employ inefficient 25 kHz technology. Not only would maritime users be getting a "free ride," but the Commission would be eliminating any incentive for them to convert to more efficient narrowband technology.

VII. Sharing With Maritime Users Will Hamper the Railroads' Effective Transition to Narrowband

The new refarming landscape in Part 90 of the Commission's rules highlights another serious problem with the Commission's proposal to allow maritime users access to railroad channels; it will effectively disrupt the railroads' transition to narrowband. An essential characteristic of railroad use of the radio frequency spectrum is sharing of facilities and frequencies among railroads on a nationwide basis. Locomotives and other radio-equipped rolling stock routinely travel over tracks and through terminals owned and operated by other railroads. This sharing of facilities and equipment makes nationwide interoperability an operational imperative and, in turn, dictates uniform channel assignments for the transition to narrowband technology. A key element of the transition plan is the migration to new interleaved channels using narrowband technology. Allowing maritime users access to railroad channels could preclude uniform channel assignments nationwide and will thereby jeopardize the effectiveness of the railroads' transition to narrowband channels.

In addition, interleaving maritime users on railroad channels would hamper the railroads' conversion to new technology by threatening to "prevent the railroads from using two or more adjacent channels to transmit large quantities of data needed for train control and other purposes."[21/] The Commission itself, on more than one occasion, has recognized the importance of the ability to aggregate channels for the use of spectrally-efficient technologies, such as digital multiple access techniques.[22/] AAR opposes the Commission's maritime sharing proposal because it limits the railroad industry's flexibility to implement such spectrum management options in order to expand communications capacity.

Conclusion

In summary, AAR urges the Commission not to allow maritime users access to the channels allocated to the railroad industry. The separation criteria proposed by the Commission do not account for the complexities and subtleties of railroad radio communication. Moreover, the Commission already has at its disposal a refarming blueprint which it is currently implementing in the PLMR bands to remedy the same congestion problems it has identified in the maritime service. This program should be

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21/ FRA Letter at 3.

22/ Spectrum Efficiency in the Private Land Mobile Radio Bands in Use Prior to 1968, Notice of Inquiry in PR Docket No. 91-170, 6 FCC Rcd 4126, 4137 (July 2, 1991); see, also, Refarming Report and Order at ¶ 26.

applied to the maritime service before imposing an additional burden on the already congested railroad channels.

Respectfully submitted,

ASSOCIATION OF AMERICAN RAILROADS

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Its Attorneys

September 22, 1995

Attachments

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DECLARATION OF CHRIS ALLMAN

I, Christopher L. Allman, Director of the Railroad Radio Service and ATCS Spectrum Management for the Association of American Railroads, make the following declaration under penalty of perjury:

1. My responsibilities include spectrum management for the Association of American Railroads. I am the FCC designated frequency coordinator for the railroad industry. I have served in this position since 1984.

2. I have reviewed the Comments of the Association of American Railroads in PR Docket No. 92-257. The factual statements contained therein are true and correct to the best of my knowledge and belief.

Christopher L. Allman
Director, Railroad Radio Service
And ATCS Spectrum Management,
Association of American Railroads

Executed on September 22, 1995

ATTACHMENT A

Excerpt from Star Herald, Scottsbluff, NE
April 17, 1984

Fatal train wreck:

Investigator says warning delayed by faulty radio

WIGGINS, Colo. (AP) — A radio malfunction prevented the engineer of a Chicago-bound freight train from tuning to the mainline frequency that should have warned him of oncoming train traffic and possibly prevented a head-on collision that killed five Burlington Northern crewmen.

Gordon Inglis, Denver investigator for the National Transportation Safety Board, said Sunday the eastbound train had its radio tuned to the railyard channel because the mainline channel required on the open track "wasn't working."

"THE ENGINEER in the lead unit was in communication with the caboose, where the conductor had a functioning road channel," said Inglis. "But by the time he called the caboose and then had the conductor call the other train, there was no time (to prevent the accident). They barely had time to jump off as it was."

Richard Sponsel, 53, engineer of the eastbound train, and head brakeman Neal Schitper both saw the other train coming at high speed and jumped out. Sponsel suffered a broken hand and minor burns and was released from Fort Morgan Community Hospital on Saturday. Schitper was treated for minor injuries and released hours after the pre-dawn collision Friday.

Four other crewmen, two in the caboose of each train, escaped uninjured.

THE FIVE VICTIMS were identified as engineer Larry D. Reed, 34, of Arvada; dispatcher trainee Mark R. Agee, 27, of McCook, Neb.; brakeman James J. Yoch, 40, of Denver; fireman Larry V. Alishio, 31, of Denver; and fireman Dennis D. Krugman, 34, Denver.

Reed, Yoch and Alishio were in the lead locomotive of the westbound train. Krugman was in the lead locomotive of the eastbound train, and Agee in the eastbound train's second locomotive. Each train was pulled by five locomotives, with the eastbound having 77 cars and the westbound 72.

Morgan County Coroner F.D. Jolliffe said the five victims probably were killed by the impact, before a savage fire broke out.

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Federal Communications Commission
Gettysburg, PA 17325-7245

RADIO STATION LICENSE

Licensee Name: UNION PACIFIC RAILROAD

Radio Service: LR RAILROAD
Call Sign: KA2337 File Number: 9301295938
Frequency Advisory No: 93047004
License Issue Date: 930316
License Expiration Date: 980316
Number of Mobiles by Category: Vehicular - 8990** Portable -4435**Aircraft - ******Marine - ******Pagers**1300*

930316M 9 1 3Z

UNION PACIFIC RAILROAD
L J KOPIASZ
1416 DODGE ST RM 210
OMAHA NE 68179

Station Technical Specifications

FCC I.D.	Frequencies (MHz)	Station Class	No. of Units	Emission Designator	Output Power (Watts)	E.R.P. (Watts)	Ground Eleva	Ant. Hgt. To Tip	Antenna Latitude	Antenna Longitude
1:	160.21500	MO	1	20K0F3E	45.000	63.000				
	160.23000	MO	1	20K0F3E	45.000	63.000				
	160.26000	MO	1	20K0F3E	45.000	63.000				
	160.29000	MO	1	20K0F3E	45.000	63.000				
	160.35000	MO	1	20K0F3E	45.000	63.000				
	160.38000	MO	1	20K0F3E	45.000	63.000				
	160.39500	MO	1	20K0F3E	45.000	63.000				
	160.41000	MO	1	20K0F3E	45.000	63.000				
	160.42500	MO	1	20K0F3E	45.000	63.000				
	160.44000	MO	1	20K0F3E	45.000	63.000				
	160.45500	MO	1	20K0F3E	45.000	63.000				
	160.47000	MO	1	20K0F3E	45.000	63.000				
	160.50000	MO	1	20K0F3E	45.000	63.000				
	160.51500	MO	1	20K0F3E	45.000	63.000				
	160.53000	MO	1	20K0F3E	45.000	63.000				
	160.56000	MO	1	20K0F3E	45.000	63.000				
	160.59000	MO	1	20K0F3E	45.000	63.000				
	160.60500	MO	1	20K0F3E	45.000	63.000				
	160.62000	MO	1	20K0F3E	45.000	63.000				
	160.65000	MO	1	20K0F3E	45.000	63.000				
	160.68000	MO	1	20K0F3E	45.000	63.000				
	160.71000	MO	1	20K0F3E	45.000	63.000				
	160.74000	MO	1	20K0F3E	45.000	63.000				
	160.77000	MO	1	20K0F3E	45.000	63.000				
	160.78500	MO	1	20K0F3E	45.000	63.000				
	160.80000	MO	1	20K0F3E	45.000	63.000				
	160.83000	MO	1	20K0F3E	45.000	63.000				
	160.86000	MO	1	20K0F3E	45.000	63.000				
	160.89000	MO	1	20K0F3E	45.000	63.000				
	160.90500	MO	1	20K0F3E	45.000	63.000				
	160.92000	MO	1	20K0F3E	45.000	63.000				
	160.95000	MO	1	20K0F3E	45.000	63.000				
	160.98000	MO	1	20K0F3E	45.000	63.000				
	160.99500	MO	1	20K0F3E	45.000	63.000				

FEDERAL COMMUNICATIONS COMMISSION

This authorization becomes invalid and must be returned to the Commission if the stations are not placed in operation within eight months, unless an extension of time has been granted. EXCEPTION: 800 MHz trunked and certain 900 MHz station licenses cancel automatically if not constructed within one year.

REFERENCE COPY THIS IS NOT A LICENSE

Federal Communications Commission
Gettysburg, PA 17325-7245

RADIO STATION LICENSE

Licensee Name: UNION PACIFIC RAILROAD

Radio Service: LR RAILROAD
License Issue Date: 930316

Call Sign: KA2337
File Number: 9301295938
License Expiration Date: 980316

Frequency Advisory No: 93047004

Number of Mobiles by Category: Vehicular - 8990** Portable - 4435** Aircraft - ****** Marine - ****** Pagers** 1300*

930316M 9 2 3Z

UNION PACIFIC RAILROAD
L J KOPIASZ
1416 DODGE ST RM 210
OMAHA NE 68179

Station Technical Specifications

FCC I.D.	Frequencies (MHz)	Station Class	No. of Units	Emission Designator	Output Power (Watts)	E.R.P. (Watts)	Ground Eleva	Ant. Hgt. To Tip	Antenna Latitude	Antenna Longitude
	161.01000	MO	1	20K0F3E	45.000	63.000				
	161.02500	MO	1	20K0F3E	45.000	63.000				
	161.04000	MO	1	20K0F3E	45.000	63.000				
	161.07000	MO	1	20K0F3E	45.000	63.000				
	161.08500	MO	1	20K0F3E	45.000	63.000				
	161.10000	MO	1	20K0F3E	45.000	63.000				
	161.11500	MO	1	20K0F3E	45.000	63.000				
	161.13000	MO	1	20K0F3E	45.000	63.000				
	161.14500	MO	1	20K0F3E	45.000	63.000				
	161.16000	MO	1	20K0F3E	45.000	63.000				
	161.19000	MO	1	20K0F3E	45.000	63.000				
	161.20500	MO	1	20K0F3E	45.000	63.000				
	161.25000	MO	1	20K0F3E	45.000	63.000				
	161.28000	MO	1	20K0F3E	45.000	63.000				
	161.31000	MO	1	20K0F3E	45.000	63.000				
	161.32500	MO	1	20K0F3E	45.000	63.000				
	161.34000	MO	1	20K0F3E	45.000	63.000				
	161.37000	MO	1	20K0F3E	45.000	63.000				
	161.40000	MO	1	20K0F3E	45.000	63.000				
	161.43000	MO	1	20K0F3E	45.000	63.000				
	161.44500	MO	1	20K0F3E	45.000	63.000				
	161.46000	MO	1	20K0F3E	45.000	63.000				
	161.47500	MO	1	20K0F3E	45.000	63.000				
	161.49000	MO	1	20K0F3E	45.000	63.000				
	161.52000	MO	1	20K0F3E	45.000	63.000				
	161.55000	MO	1	20K0F3E	45.000	63.000				
	161.61000	MO	1	20K0F3E	45.000	63.000				

AREA OF OPERATION
SITE 1: US UNION PACIFIC RAILWAY SYSTEM

CONTROL POINTS:UPRR OPERATION CONTROL RM 210 1416 DODGE OMAHA NE
CONTROL POINT PHONE: 402-271-2020

FEDERAL COMMUNICATIONS COMMISSION

This authorization becomes invalid and must be returned to the Commission if the stations are not placed in operation within eight months, unless an extension of time has been granted. EXCEPTION: 800 MHz trunked and certain 900 MHz station licenses cancel automatically if not constructed within one year.

REFERENCE COPY THIS IS NOT A LICENSE

Federal Communications Commission
Gettysburg, PA 17325-7245

RADIO STATION LICENSE

Licensee Name: UNION PACIFIC RAILROAD

Radio Service: LR RAILROAD
License Issue Date: 930316
Call Sign: KA2337
File Number: 9301295938
License Expiration Date: 980316
Frequency Advisory No: 93047004
Number of Mobiles by Category: Vehicular - 8990** Portable -4435**Aircraft - ******Marine - ******Pagers**1300*

930316M 9 3 3Z

UNION PACIFIC RAILROAD
L J KOPIASZ
1416 DODGE ST RM 210
OMAHA NE 68179

Station Technical Specifications

FCC I.D.	Frequencies (MHz)	Station Class	No. of Units	Emission Designator	Output Power (Watts)	E.R.P. (Watts)	Ground Eleva	Ant. Hgt. To Tip	Antenna Latitude	Antenna Longitude

SPECIAL COND: 161.610 MHZ (GRANDFATHERED) #12

ADMIN NOTE: SEE ATTACHED #14

EMISSION DESIGNATOR(S) CONVERTED TO CONFORM TO DESIGNATOR(S)
SET OUT IN PART 2 OF THE COMMISSION'S RULES.

FEDERAL COMMUNICATIONS COMMISSION

This authorization becomes invalid and must be returned to the Commission if the stations are not placed in operation within eight months, unless an extension of time has been granted. EXCEPTION: 800 MHz trunked and certain 900 MHz station licenses cancel automatically if not constructed within one year.

RECD

CERTIFICATE OF SERVICE

I, Deirdre A. Johnson, hereby certify that on this 22nd day of September, 1995, copies of the foregoing "Comments of the Association of American Railroads" were mailed, first class postage prepaid to the following:

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Commissioner Rachelle B. Chong
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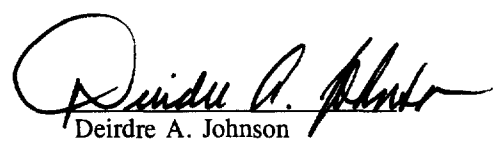

Deirdre A. Johnson